Official Worldwide Olympic Partner

Panasonic

HD Visual Communications System

KX-VC1600
KX-VC1300
KX-VC300

*This image shows the KX-VC1600

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HD Visual Communications System: http://panasonic.net/psn/products/hdvc/index.html

Printed in Japan MG-HDCC012EN 1410NSP/SSP----1

Connects multiple sites to allow for flexible, stress-free videoconferences for all participants.

The new HD Visual Communications (HDVC*) System connects to multiple sites for videoconferences with minimal installation costs. You can also use a mobile device to take part in a videoconference from a location away from your company. The HDVC System realises effective visual communication without restrictions on time or place. It flexibly responds to a wide range of communication needs in various fields, such as education, manufacturing, healthcare, finance and sales.

* HD Visual Communications System is abbreviated as HDVC hereafter.

Enhanced Model

KX-VC1600 NEW

(Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.)

10-Site*1 Connection | Dual Network | Multi Device | Triple Monitor | Broadband Stereo Full Duplex Audio | Full-HD 1080/60p | AV-QoS | Camera Control

Basic Model

KX-VC1300 NEW

(Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.)

4-Site Connection | Multi Device | Dual Monitor | Broadband Stereo Full Duplex Audio | Full-HD 1080/60p | AV-QoS | Camera Control

*1 Option must be purchased. (Refer to "Activation key" on page 16.)

Connection to Multiple Sites

The HDVC System can connect up to 10 sites without any optional equipment. It can connect via intranet or Internet, thus enabling multi-site videoconferencing with a client or with people in distant locations via mobile devices.

* Connection of up to 10 sites is supported only by the KX-VC1600. The indicated number of connection sites includes the home location.
* Option must be purchased.

Clear Communication

The HDVC System incorporates Panasonic's high-quality image and sound technologies cultivated in the development of various AV products over the years. The system conveys facial expressions and nuances of voices to facilitate discussions and remote lectures.

Easy to Use

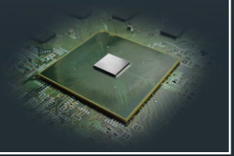
The Triple Monitor function displays a PC document and the images of distant sites and the home location on three monitors. The sub camera function displays fine details in a close-up view. Various convenient functions help to make communication smooth and accurate.

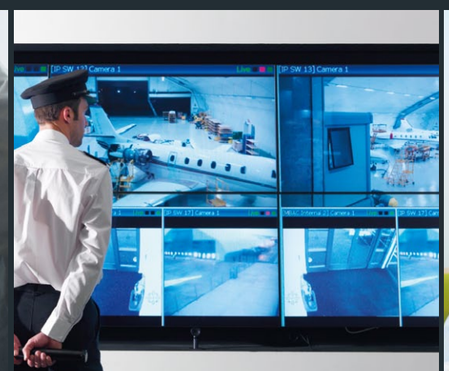
* The function to display on three monitors is supported only by the KX-VC1600. The KX-VC1300 can display images on two monitors.

Panasonic's high-quality image technology

The digital home electronics platform Uniphier® system LSI achieves high image quality, making it possible to display facial expressions and gestures in clear, Full-HD images as part of the visual communication experience.

UniPhier





Connection to Multiple Sites

10-Site Connection (Supported only by the KX-VC1600)

Multi-site videoconference with people at up to 10 locations*1

The KX-VC1600 lets you hold a multi-site videoconference with people at up to 10 sites*1 without requiring the purchase of expensive MCUs (Multi-point Connection Units). When combined with Panasonic's NAT Traversal Service or HD Visual Communication Mobile (HDVC Mobile) software that enables the use of mobile devices for participating in a videoconference, you can have effective visual communication without restrictions on time or place.

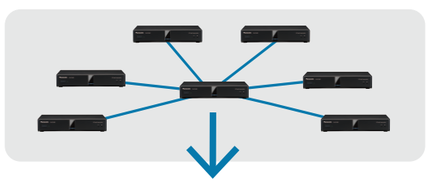
*1 Option must be purchased. (Refer to "Activation Key" on page 16.)

* HDVC System connection service

Flexible holding of multi-site videoconferences

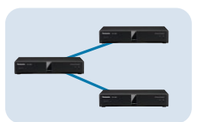
The HDVC System lets you hold a multi-site videoconference at virtually any site you choose. Even if the locations of the multi-site videoconferences change each time, the videoconference can be held using only the equipment at the participating sites. The HDVC System allows flexible holding of videoconferences.

7-site videoconference



4-site videoconference

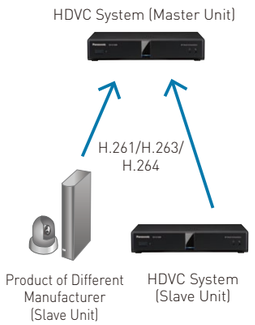
3-site videoconference



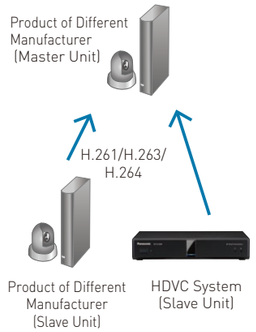
Connectable to products of different manufacturers

The KX-VC1600 and KX-VC1300 comply with the H.261, H.263 and H.264 international video compression standards. Therefore, they can connect to older product models manufactured by different companies as long as they comply with those standards. This allows phased system expansion while using existing videoconference equipment.

Addition of HDVC System as Master Unit



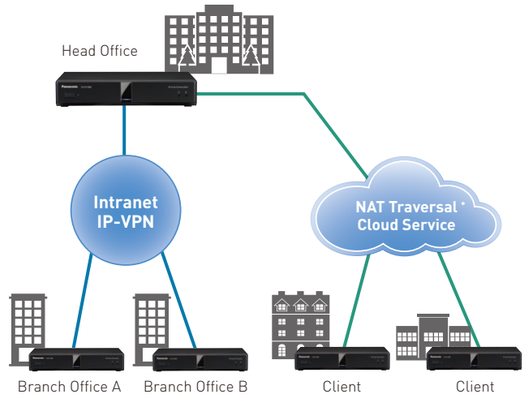
Addition of HDVC System as Slave Unit



Dual Network (Supported only by the KX-VC1600)

Connection to offices and clients

Because the HDVC System can connect via intranet/VPN and Internet simultaneously, it is easy to configure a videoconference system connected to sites inside and outside your company. The HDVC System can be used to hold videoconferences with clients without a large investment in equipment.



* HDVC System connection service

Multi Device

Participation in videoconferences using mobile devices

You can join a videoconference from a location outside of the office, while you are on the go, or from your own home using a Windows/iOS/Android™ mobile device. The HDVC System provides effective visual communication without restrictions on time or place. (HDVC Mobile will be released in December 2014.)

How to obtain HDVC Mobile

HDVC Mobile is required for participating in a videoconference using an iOS/Android™ mobile device or Windows PC. HDVC Mobile can be downloaded from the following URL.
http://panasonic.net/psn/products/hdvc/product/mobile_android/index.html

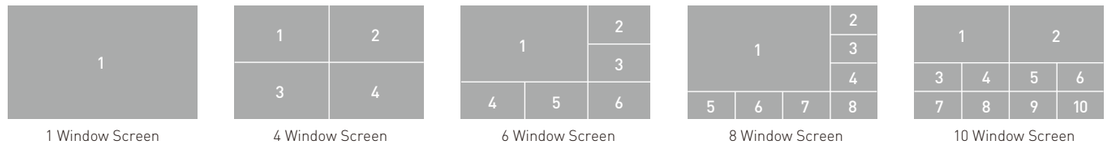
*1 Connection to the KX-VC1600 or KX-VC1300 from Windows PCs and Android™ devices is scheduled to be supported from December 2014.
* An Activation Key is required to use the software. For details, see page 16.

Optimum screen layout

The HDVC System comes with a function that lets you choose a screen layout from a variety of options. For instance, you can select a screen layout to show all participating sites or to display the site with a high voice level in a large window (Window 1 in the layouts shown below). The most suitable screen layout can be selected according to the type of videoconference held.

The screen layout changes automatically according to the number of connection sites.

* Positions of windows displaying sites are determined by the connecting order.



Other screen layout functions

- Display of a selected site (home location, distant location) at the upper left corner (Priority 1 position) (Site Selection)
- Display of the master location at Priority 1 position and display of the site with the highest sound level at Priority 2 position (Voice Activated Changeover 2)

Clear Communication

Full-HD 1080/60p

Conveys even facial expressions and gestures

The HDVC System delivers high-resolution Full-HD 1080/60p images at an IP rate of approximately 1.5 Mbps. Displayed images are as clear as Full-HD TV images and allow for effective visual communication. The HDVC System shows even small changes in facial expressions for high-quality communication.

SD

Full-HD

Even changes in facial expressions can be seen clearly, and gestures, actions and quick motions appear smoothly.

High-image-quality 1080/60p HD Communication Camera

When combined with the GP-VD151/GP-VD131, the HD Communication Camera delivers smooth, high-resolution 1080/60p Full-HD images.

GP-VD151 (Sold Separately) NEW
HDMI cable sold separately

- Full-HD
- 12x Optical zoom/10x digital zoom
- Pan range: ±100°/tilt range: ±30°
- Can be controlled from the remote control of HDVC System

GP-VD131 (Sold Separately) NEW
HDMI cable sold separately

- Full-HD
- 3x Optical zoom/4x digital zoom
- Pan range: ±100°/tilt range: ±20°
- Can be controlled from the remote control of HDVC System

Broadband Stereo Full Duplex Audio

Easy to hear even when two people talk simultaneously

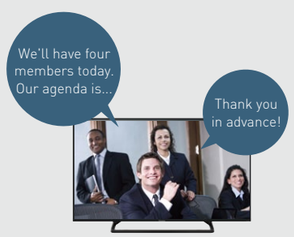
Full-duplex audio in wideband stereo allows high-quality sound to fill the room with clarity. A unique Echo Canceller prevents echoes and howling, and there are hardly any delays or interruptions even when two people speak at the same time. You can enjoy smooth, natural conversations as if you were all in the same room.

There is hardly any interruption even when two people speak at the same time or when conversations overlap.

High-quality Boundary Microphone

The HDVC System has four compact built-in microphones. A direction recognition function reflects the direction and position of the speaker's voice to the listener's side speakers.

Digital Boundary Microphone
KX-VCA001 (Sold Separately)



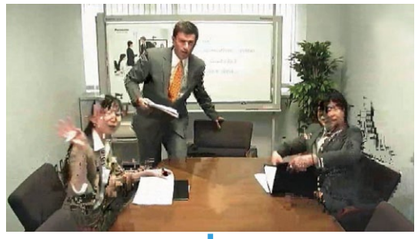
You can hear the voices of the speakers right from their positions.

AV-QoS

Stress-free conference

Generation of packet losses is prevented by the rate control, and lost packets are restored by the combined use of the forward error correction and automatic repeat request control. Even if the bandwidth decreases after communication starts, clear communication is maintained according to the communication line condition. Because video and audio communication is maintained at 256 kbps per site, there are minimum image disruptions and audio interruptions, and the connection stays stable.

Comparison of communication quality with congested network connection



Without AV-QoS

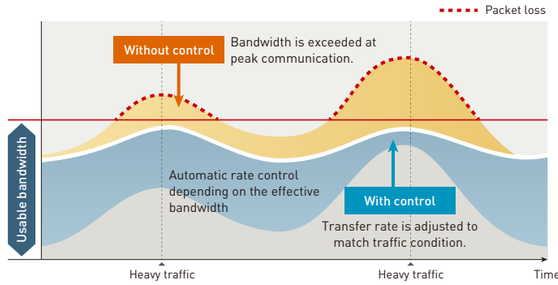
Frequent image disruptions

With AV-QoS

Minimum image disruptions

Rate Control

The rate control accurately estimates the congestion of the network and controls the amount of data to be transferred to prevent packet losses. It suppresses image disruptions and audio interruptions even when using Internet connection whose available bandwidth changes according to the increases and decreases of network traffic.



Minimum interruptions even when wireless connection is used

AV-QoS is also effective for wireless (Wi-Fi®/WiMAX/LTE) connection, and minimises connection interruptions. Wireless connection allows you to hold a videoconference in a meeting room, discussion booth, product development site or exhibition site where there is no cable LAN connection.

In a booth without cable LAN

The HDVC System can be set up in a discussion booth or business negotiation corner where there is no cable LAN, and allows easy videoconferencing.

At a product development/manufacturing site

When the HDVC System is set up in a work site where cable LAN is not available, it lets you show a whiteboard and details of product samples in close-up using a handheld video camera. This promotes effective and efficient discussions.

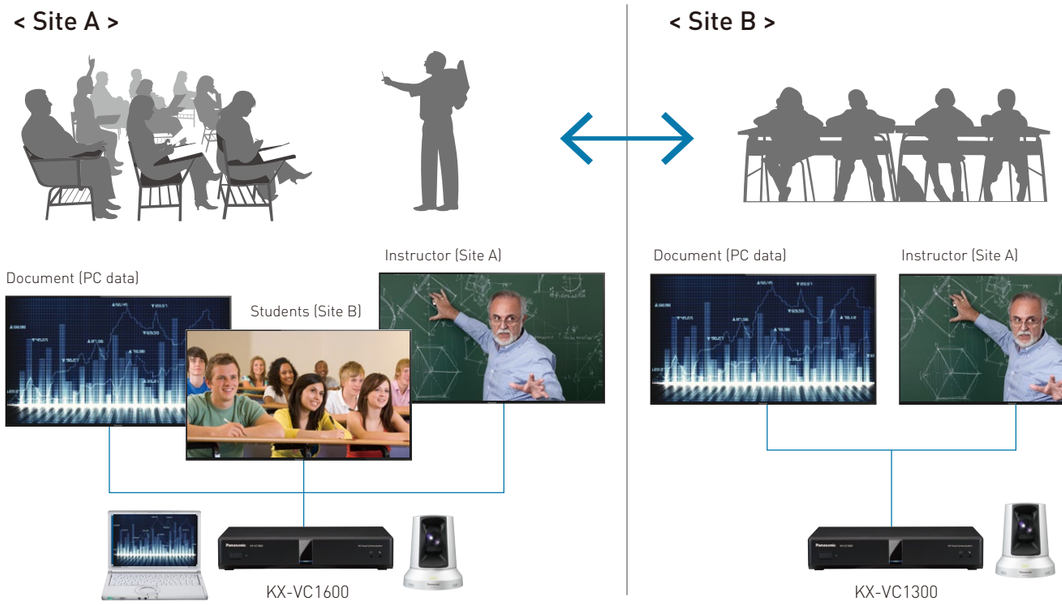
Easy to use

Triple Monitor (Supported only by the KX-VC1600)

Accurate communication of information

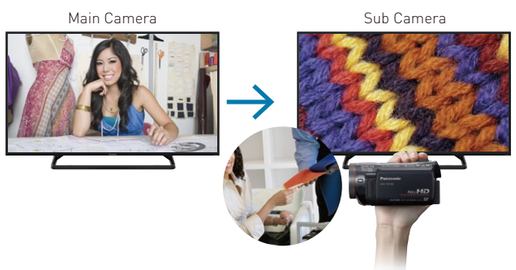
The HDVC System supports H.239 dual streaming to simultaneously transmit the home location image and a PC document image and to simultaneously receive the image of a distant site and a PC document image. The KX-VC1600 features a Triple Monitor function*, which can display a PC document, the image of a distant site and the image of the home location separately on three monitors. Display of a PC document on a large screen facilitates understanding and provides effective visual communication.

* The KX-VC1300 supports Dual Monitor.



Detailed inspection of product or parts

The image of a product sample or parts captured with a Sub Camera can be shown to other parties during a videoconference. The clear, high-resolution images displayed by the HDVC System allow close examination of material textures and small details that are difficult to see with the bare eyes.



Sharing of PC documents through high-resolution images

With the HDVC System, you can display PC data, such as images and presentation documents, to other parties. It enables smooth sharing of documents and other information in high-resolution 1920 x 1080 Full-HD for various applications such as presentations and training.

Camera Control

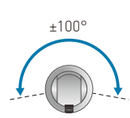
Intuitive operation

The remote control of the HDVC System lets you control the pan, tilt and zoom operations of dedicated cameras mounted at the home location and a distant site. A PC and sub camera can be easily switched with a single press of the button. The remote control features a user-friendly button layout just like that on a TV remote control, thus allowing intuitive operation.

Pan

HD Communication Camera lens rotates ±100° in horizontal direction.

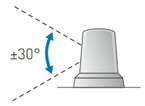
Applicable models: GP-VD151, GP-VD131



Tilt

HD Communication Camera lens rotates ±30° in vertical direction.

Applicable model: GP-VD151 (±20° in GP-VD131)



Zoom

Optical zoom enlarges images up to 12 times.

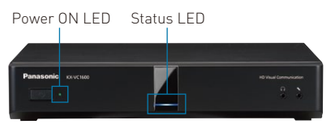
Applicable model: GP-VD151 (3x optical zoom in GP-VD131)

External control of Power ON/OFF

The main unit of the HDVC System can be turned ON/OFF from the remote control and also from the external device connected to the serial interface.

* When power is supplied to the main unit of the HDVC System from the AC adaptor, the system enters standby status.
* The HDVC System can be turned ON/OFF using the Power switch on the main unit or on the remote control.

Power ON/OFF and Status Indicators



Status	Power ON LED	Status LED	Operation
Power supplied from AC adaptor	Red light	Light OFF	–
Power ON - Startup	Green flashing light → Green light ON	Blue flashing light	Press and hold the Power button on main unit/remote control.
Communicating	Green light	Blue light	–
Standby	Green light	Light OFF	Press once the Power button on remote control.
Shutting down	Green flashing light	Light OFF	Press and hold the Power button on main unit/remote control.
Forced shutdown	Green flashing light	Blue flashing light	Press and hold the Power button on main unit.

* If the main power switch has turned off due to a power outage or by manual operation (example, disconnection of extension cord), the HDVC System starts up in the previous status (Ready or Stand-by) next time power is supplied.

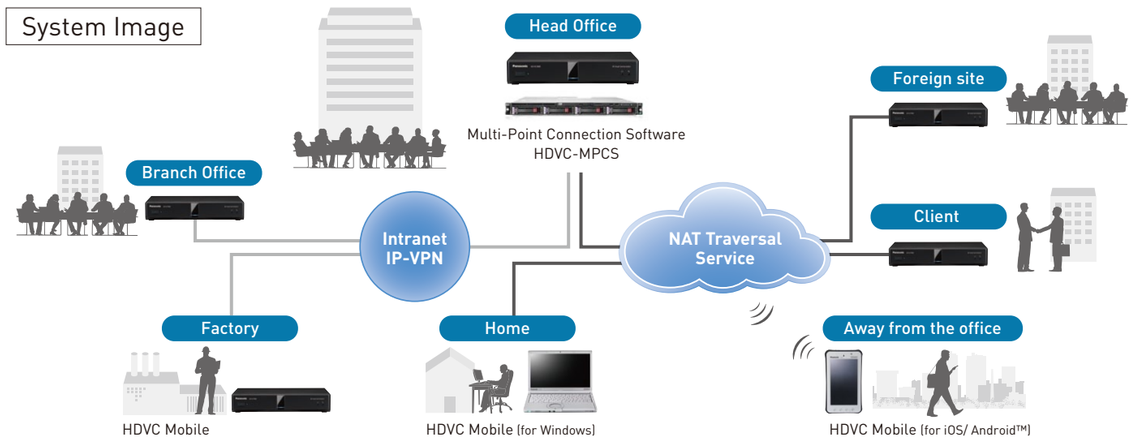
HD Visual Communications Multi-Point Connection Software*

* HD Visual Communications Multi-Point Connection Software is abbreviated as HDVC-MPCS hereafter.

HDVC-MPCS (multi-point connection software) allows 6-site, 8-site, 12-site or 16-site configuration to meet the user's multi-site videoconferencing need. The number of connection sites can be increased from 8 to 12 or from 12 to 16 after the product purchase.

* A server is required for multi-site connection.
* In the case of 6-point connection software, the number of connection sites cannot be increased after the product purchase.

System Image



* HDVC Mobile for Windows, iOS and Android supports intranet connection.
• Use of HDVC Mobile requires a bandwidth of 384 kbps or higher (video: QVGA, audio: G722 monaural) for the transmission/reception of video and audio data.
• When using HDVC Mobile with the ELUGA series or TOUGHPAD JT-B1 series, earphones or earphones with built-in microphones are required.
• In the case of LTE communication, the bandwidth may become restricted depending on to the amount of packets. For details, contact the telecommunications company.

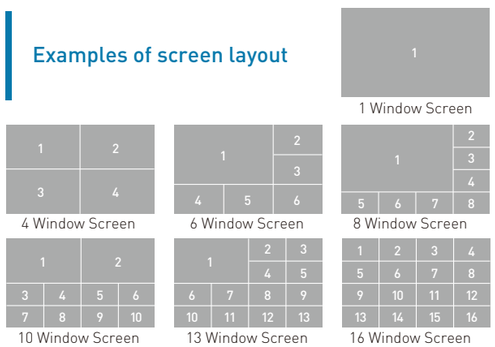
Features of HDVC-MPCS

Choose the Screen Layout to Match Your Situation

The screen layout can be selected to match the user's need, thus allowing flexible videoconferencing.

Auto Layout Change	The screen layout automatically changes according to the number of HD Visual Communications Systems participating.
Manual Layout Change	Change the layout manually while the meeting proceeds.
Fixed Layout	Determine the screen layout based on ones that you have set in advance.
Voice Switching	Display the participating device with the highest sound volume as Priority 1 (upper left screen).

Examples of screen layout


1
1 Window Screen
1 2 3 4
4 Window Screen
1 2 3 4 5 6
6 Window Screen
1 2 3 4 5 6 7 8
8 Window Screen
1 2 3 4 5 6 7 8 9 10
10 Window Screen
1 2 3 4 5 6 7 8 9 10 11 12 13
13 Window Screen
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
16 Window Screen

Easy-to-see images even in multi-site connection setup

The HDVC System supports H.264 High Profile to display HD images at low bandwidths (512 kbps).

* HDVC Mobile (for iOS/Android™) displays SD images.

Multi-speed communication for display of images with optimum image quality

HD images and SD images are transmitted separately. Each of the sites can use the image quality that is optimal for the available communication speed, rather than having to match to the lowest speed.

Participation in the videoconference from an outside location

A tablet, smartphone or PC installed with HDVC Mobile, an application developed exclusively for the HDVC System, lets you participate in a videoconference while you are on the go.

* An Activation Key is required to use the software. For details, see page 16.
* Connection to the KX-VC1600 or KX-VC1300 from Windows PCs and Android devices is scheduled to be supported from December 2014.

Main Specifications

HD Visual Communications Multi-Point Connection Software (HDVC-MPCS)			
No. of Simultaneous Conferences			1 conference
Number of Sites in Conference			Up to 16 sites *1
Connection Modes			IP mode, NAT Traversal Service *2
Bandwidth Setting			2Mbps / 1.5Mbps / 1.0Mbps / 768kbps / 512kbps / 384kbps *3
Call Control	Standard		SIP (TCP/UDP)
	Connection Method		Dial-in / Dial-out based on web operation / Dial-out by external control interface *4
QoS	ARQ (Automatic Repeat-Request)		Video, audio
	ARC (Audio Return Channel)		Video
Video	Transmission Capacity	Profile	H.264 Baseline Profile Level 3.1 / H.264 High Profile Level 3.1
		Video Resolution	720p/w432p *5
		PC Resolution	VGA / SVGA / XGA / 720p
	Reception Capacity	Video Resolution	720p / 4SIF / w432p / w288p / VGA / QVGA
		PC Resolution	VGA / SVGA / XGA / 720p
		Compatible Profile	H.264 Baseline Profile Level 1.3–3.1 / H.264 High Profile Level 3.1
	RTP/MTU Size		1,240 bytes (video packet) *6
	RTP Format		RFC 6184 compliant (Single NALU/non-interleaved)
Audio	Codec	Profile	G.722 / G.722.1c
	RTP/Transmittance Interval		20 msec
Encrypted Communication			AES128 *7
Screen Display	No. of Screen Windows		CP1 / CP4/ CP6 / CP8 / CP10 / CP13 / CP16
	Display Content		Screen Layout mode. An appropriate layout displays images from connected sites. *8 Presentation mode. HDVC images shared by PCs are displayed full-size. *9
	Meeting Modes		Normal mode / Ad-Hoc mode
Web User interface	Settings Management		Basic Device Settings / Meeting Room Management (Status Display/Profile Settings) / Static NAT Settings / NAT Traversal Settings
	Operations		Meeting Start (Dial-Out Transmission) /End / Layout Control/ Display Position Control / Mute Control / NAT Traversal Test Suppress NAT Traversal Messages
	Log		Log Acquisition/Display
	Address Book		Max. 200 addresses
	Configuration Data Backup		Backup / Restore Function *10
	Language		Japanese / English
External Control			Meeting Settings, Start/End, Status Acquisition/Control, Profile Settings
License Management			By software license *11
CPU			Intel CPU 4 core 3.4 GHz or faster
Memory			RAM 8 GB or more
Amount of free HD space			HDD 32 GB or more *12
OS			Red Hat Enterprise Linux v6 64bit Cent OS6.2 64bit *13

*1 Connectable with KX-VC1600, KX-VC1300, KX-VC300, iOS/Android devices, and Windows PCs. Connection is not possible with an other brand device or an MCU. *2 Not compatible with NGN. *3 When holding a meeting, the maximum bandwidth per site must be decided in advance. *4 Dial-out by web reservation is under consideration for the future. *5 Maximum resolution and max. frame rate is 720@30p. *6 Depends on PC setting. *7 Key exchange using MIKEY. *8 All sites displayed simultaneously.
*9 Sub-camera images can also be shared. *10 Backup data cannot be edited. *11 Function activation (CP6, CP8, CP12, CP16) and 4-site addition function. *12 Not including OS space. *13 Red Hat 6.2/6.4 compatibility planned

Connectable Devices
• Refer to the following website for information on Android and Windows devices.
<Android> http://panasonic.net/psn/products/hdvc/product/mobile_android/popup/english.html
<Windows> http://panasonic.net/psn/products/hdvc/product/mobile_android/popup/english_win.html
• Windows PCs that satisfy the following requirements can be connected. CPU: Core i5 (4 thread) or higher; OS: Windows® 7 or Windows® 8 (using Desktop; Modern UI not supported)

Server Specifications (6-site KX-VCM206W)

Item	Details
CPU	Intel Core i7 or Xeon E3-1280
Clock (GHz)	3.4 GHz
No. of CPUs	1
Cores/threads	4/8
Cache	8 MB
Memory	8 GB or more
Hard disk free space	128 GB or more (Not including OS space)

Server Specifications (8 sites or more)

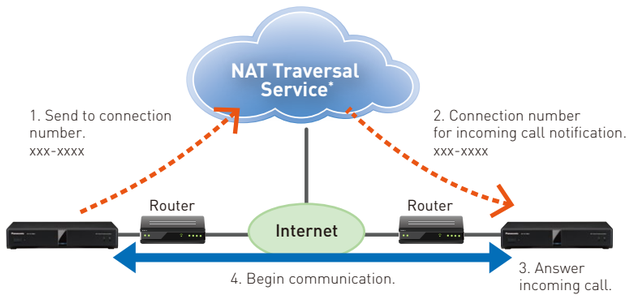
Item	Details
CPU	Intel Xeon X5690
Clock (GHz)	3.46 GHz
No. of CPUs	1 or more
Cores/threads	6/12
Cache	12 MB
Memory	8 GB or more
Hard disk free space	128 GB or more (Not including OS space)

Server OS

Item	Details
OS	CentOS_6.2_final 64bit
	Red Hat Enterprise Linux Server release 6.2 64-bit
	Red Hat Enterprise Linux Server release 6.4 64-bit

NAT Traversal Service

NAT Traversal Service is a network service offered exclusively for use by the HDVC System. It can be used to hold a videoconference between your company and other sites. It enables easy establishment of a communication environment without complex router settings, and uses Internet line for economical operation.



* HDVC System connection service

■ Advantages of NAT Traversal Service

Connection from a location outside the company such as a business trip destination

Use of Internet line instead of a VPN facilitates the connection from an office in the company, a customer's site or a client.

Excellent cost-performance

Use of Internet line means no initial investment for the construction of a VPN. Furthermore, there is no need to obtain a fixed global IP address, so the running costs can be reduced significantly.

Easy operation and management

Since complex network settings are not required, the HDVC System can be operated and managed without a dedicated personnel.* Connection is as easy as entering a 7-digit number just like dialing a phone number.

* When installing a router approved by Panasonic and entering the settings approved by Panasonic.

■ Service Details and Specifications

How to Use the Service

- A free trial Activation Key is included with the system. By using this key to register, you can use the service for three months.
- To use HDVC-MPCS with NAT Traversal Service, please purchase an Activation Key.
- In order to continue using the NAT Traversal Service after the trial period ends, you must purchase a paid activation key to extend the connection function expiration date. For details, please consult your nearest dealer.

NAT Traversal Service

Tested Routers	**(US)** Cisco Linksys E1000, E4200 / NETGEAR N300, N750 **(Europe)** Cisco Linksys E1000, E4200 / NETGEAR N300, N750 / LANCOM 1711VPN **(Japan)** YAMAHA RTX1200, RTX1100, NVR500 / BUFFALO WHR-G301N, WZR-HP-G302H, WHR-HP-G300N, WZR-300HP, BHR-4GRV / NEC Access Technica PA-WR8170N-ST, PA-WR8700N-HP, PA-WR8750N-HP **(Canada / Latin America / Oceania / Asia)** Please select one of the routers designated for use in the US, Europe and Japan. * You may not be able to connect depending on your router settings. Please check with your nearest dealer. For other routers, please check the NAT Traversal Service website. http://panasonic.net/psn/products/hdvc/nat/index.html
Applicable Models	KX-VC1600, KX-VC1300, KX-VC300*1, HDVC-MPCS *1 Android™ terminal connection is possible with software version 3.0 or newer.

- Contracts for an Internet line (an optical line is recommended) and an Internet service provider are also required.
- Usage restrictions on the communication data amount and the bandwidth may apply depending on the service provider.
- Please do not connect multiple HD Visual Communications Systems to a single router.
- Connection between the HD Visual Communications System and Android™ terminals is a 1:1 connection. Android™ terminals cannot be connected to each other.
- The communication bandwidth for the Android™ terminal may be limited by the packet amount. For details, please contact your Internet service provider.
- The packet amount for the Android™ terminal may increase due to the sending and receiving of motion images. This should be considered when concluding the communications contract with your Internet service provider.
- HDVC Mobile cannot be used with 3G devices because the bandwidth is likely to be insufficient.
- A bandwidth that supports 384 Kbps or more is required to use HDVC Mobile for sending and receiving images and sound (for QVGA video and G.722 monaural audio).
- A separate earphone is required to use HDVC Mobile with the ELUGA Series. A headset is required for use with the TOUGHPAD JT-B1 Series.
- The paid activation key cannot be returned for a refund once it has been used.
- Legal regulations prevent the supply of this service to China.
- For the latest information, please check the NAT Traversal Service website.
- HDVC Mobile devices cannot be directly connected to each other. However, they can be connected via HDVC-MPCS.
- To connect the HDVC-MPCS to the NAT Traversal Service, the NAT Traversal Service must be registered.
- A bandwidth of 256 Kbps or higher is required for sending and receiving images and sound with HDVC Mobile (video: QVGA Android)/W432p (Windows), audio: G.722 for monaural).
- To ensure security in the event that you lose a smartphone or tablet, be sure to set the Screen Lock function.

Countries connectable via NAT Traversal Service

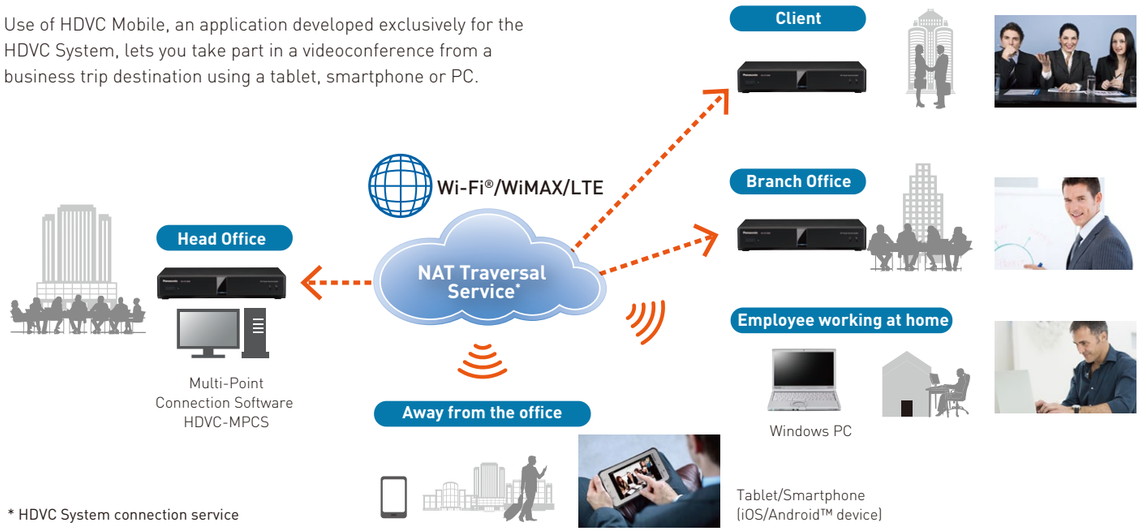
Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Finland, France, Germany, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Rumania, Singapore, Spain, Sweden, Switzerland, Taiwan, Thailand, UK, USA*, Vietnam

* The release date of HDVC Mobile in the United States has not yet been determined.

HD Visual Communication Mobile*

* Activation Key is required to use the software. For detail, see page 16.
* Connection to the KX-VC1600 or KX-VC1300 from Windows PCs and Android devices is scheduled to be supported from December 2014.

Use of HDVC Mobile, an application developed exclusively for the HDVC System, lets you take part in a videoconference from a business trip destination using a tablet, smartphone or PC.

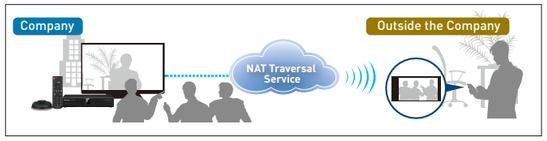


* HDVC System connection service

Examples of use

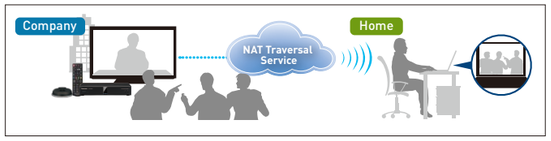
Using a mobile device to connect from a location outside the office

Visual communication can be held with office staff from a business trip destination or your home. This enables smooth communication and collaboration without restrictions of place.



Participation in videoconference from a site without HDVC System

A PC installed with HDVC Mobile enables you to participate in a videoconference from a meeting room or your office desk where HDVC System is not set up, or even from your home.



■ Main Specifications

HDVC Mobile (for Windows)

Device Requirements	CPU	Core i5 or faster, memory: 2 GB or more
	OS	Windows7, 8 (Using Device mode, Modern UI not supported)
	Display Resolution	1280×720 or higher
Peripheral Devices	Camera	Logicool: HD Pro Webcam C920t Microsoft: LifeCam Cinema H5D-00019 LifeCam Studio Q2F-00020
	Headset	Logicool: USB Headset H340 ELECOM: HS-EP02USV
	Speaker / Microphone	Yamaha: PJP-20UR NTT-AT: R-TALK 800PC

HDVC Mobile (for iOS)

Device Requirements	CPU	Apple A5 or faster
	OS	iOS7.0 or later iPhone, iPad, iPad mini (iPod touch not supported)

* If 2-way communication is difficult using the Hands Free function, use earphones or a headset.

HDVC Mobile (for Android™)

HDVC Mobile Applicable OS	Android™ 4.0 or later	
Android™ Devices Tested for Intercompatibility with the HDVC Mobile	Panasonic	ELUGA X (P-02E)*1 ELUGA P (P-03E) TOUGHPAD JT-B1
	Samsung	GALAXY S4 (SC-04E) GALAXY S4 (GT-I9500)
	Google	Nexus 7 Nexus 10*2
	Sony	Xperia A (SO-04E)
HDVC Mobile for Android™ terminal connection network	Wi-Fi®, WiMAX, LTE	

*1 Headsets cannot be used.
*2 HD (720p) communication is not supported.
- Whether those devices can be used is dependent on the actual communication service and communication environment.
- The 5-GHz Wi-Fi® band is recommended when using HDVC Mobile and a Bluetooth® headset simultaneously on these devices.

Product Line-up

Enhanced Model

KX-VC1600

(Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.)

- 10-Site*1 Connection
- Dual Network
- Multi Device
- Triple Monitor
- Broadband Stereo Full Duplex Audio
- Full-HD 1080/60p
- AV-QoS
- Camera Control

*1 Option must be purchased. (Refer to "Activation Key" on page 16.)

Basic Model

KX-VC1300

(Remote control included. HD Communication Camera, Boundary Microphone and HDMI cable sold separately.)

- 4-Site Connection
- Multi Device
- Dual Monitor
- Broadband Stereo Full Duplex Audio
- Full-HD 1080/60p
- AV-QoS
- Camera Control

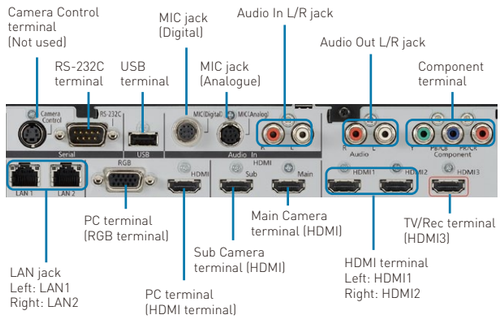
KX-VC300

(Remote control included. HD Communication Camera, Boundary Microphone, HDMI cable sold separately.)

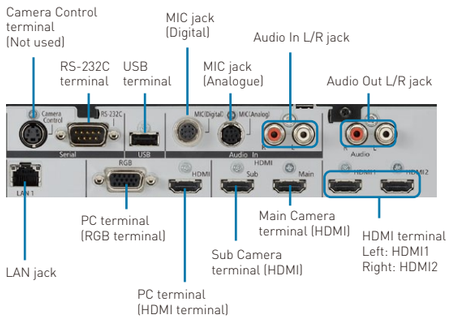
- 4-site*2 connection
- HD 720p video quality
- Connection of product of different manufacturer
- MCU connection
- PC connection
- Sub Camera connection
- Analogue Boundary Microphone (1 unit)

*2 Activation Key (sold separately, see page 16) expands the function to enable 4-site connection.

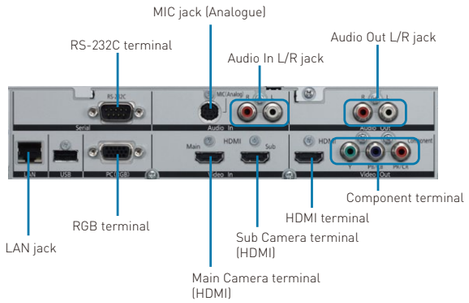
[Rear Panel View]



[Rear Panel View]



[Rear Panel View]



Function Comparison List

	Maximum Conference Points	Image Resolution	Monitor	Other-brand Device Connection*1	MCU Interoperability*2	Computer Connection	Digital Boundary Microphone (KX-VCA001)	Analogue Boundary Microphone (KX-VCA002)
KX-VC1600	6*3	Full HD 1080/60p	3	Yes	Yes	Yes	Yes (1-4 unit)	Yes (1 unit)
KX-VC1300	4	Full HD 1080/60p	2	Yes	Yes	Yes	Yes (1-4 unit)	Yes (1 unit)
KX-VC300	2*4	HD 720p*5	1	Yes	Yes	Yes	No	Yes (1 unit)

*1 Please ask your nearest dealer about other-brand devices that can be connected.
*2 Please ask your nearest dealer about MCUs that can be connected.
*3 The optional Activation Key lets you expand the KX-VC1600's maximum conference points to up to 10 locations.(Refer to "Activation Key" on page 16.)
*4 The KX-VC300 also allows connection of 3 or 4 locations when it is on the receiving end of a call. The optional Activation Key lets you expand the KX-VC300's maximum conference points to up to 4 locations. (Refer to "Activation Key" on page 16.)
*5 The optional Activation Key lets you upgrade the maximum resolution of the KX-VC300 system to 1080p/i. (Refer to "Activation Key" on page 16.)

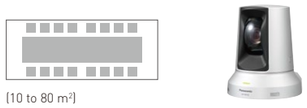
TV Stand Installation Examples

Options

HD Communication Camera

GP-VD151 Full-HD

(HDMI cable sold separately)
- 12x Optical zoom/10x digital zoom
- Pan/tilt function



(10 to 80 m²)

GP-VD131 Full-HD

(HDMI cable sold separately)
- 3x Optical zoom/4x digital zoom
- Pan/tilt function

(10 to 40 m²)

AW-VC2 Full-HD

(HDMI cable sold separately)
- 4x Digital zoom
- Pan/tilt function (manual and digital)
- Ceiling-mountable

(10 to 20 m²)

Boundary Microphone

Digital Boundary Microphone

KX-VCA001

(Cable (approx. 8.5 m) included)
- A high-grade microphone with a direction recognition function that detects the direction of the speaker's voice

Analogue Boundary Microphone

KX-VCA002

(Cable (approx. 7 m) included)
- A compact, economical and high-grade stereo microphone

Extension Cable for the Digital Boundary Microphone

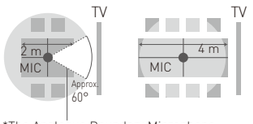
KX-VCAEX01
- For use in setting up the HDVC System in a place where the cable provided with the Digital Boundary Microphone cannot reach
- Connect the extension cable directly to the HDVC System.

Allows flexible system setup according to the number of connection sites and the size of room.

< Sound collecting ranges of microphones >

Up to 40 m² (1-10 people)

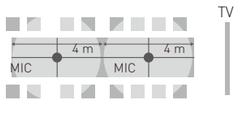
Analogue Boundary Microphone x 1 / Digital Boundary Microphone x 1



*The Analogue Boundary Microphone exceeds the sound-collecting range at an angle of about 60° on the connector side.

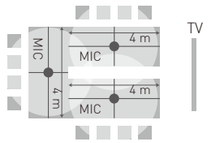
Up to 80 m² (Up to 20 people)

Digital Boundary Microphone x 2



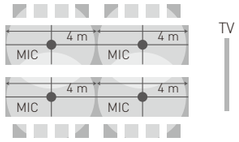
Up to 120 m² (Up to 30 people)

Digital Boundary Microphone x 3



Up to 160 m² (Up to 40 people)

Digital Boundary Microphone x 4



*This diagram is intended only as a layout example. It is not meant to show the maximum number of people that can be covered.
*This is the pick-up capacity when using the Digital/Analogue Boundary Microphone. The capacity varies when using another microphone.

Activation Key

For HD Visual Communications Unit

Type	Detail	Model
KX-VC300	Upgrade standard 2-site connection to 4-site connection.	KX-VCS301
KX-VC1600	Upgrade standard 6-site connection to 10-site connection.	KX-VCS304
KX-VC300	Upgrade to Full-HD Image Quality	KX-VCS401

Software License Card for HDVC-MPCS

Detail	Model
MPCS Ver. 2.0 6-Site Model*1	KX-VCM206W
MPCS Ver. 2.0 8-Site Model	KX-VCM208W
MPCS Ver. 2.0 12-Site Model	KX-VCM212W
MPCS Ver. 2.0 16-Site Model	KX-VCM216W
MPCS 4-Site Expansion	KX-VCMS001W
MPCS Upgrade 6-Site*2	KX-VCMS206W
MPCS Upgrade 8-Site*2	KX-VCMS208W
MPCS Upgrade 12-Site*2	KX-VCMS212W
MPCS Upgrade 16-Site*2	KX-VCMS216W

*1 In the case of 6-point connection software, the number of connection sites cannot be increased after the product purchase.
*2 The license cards let you upgrade from HDVC-MPCS Ver. 1.0 to Ver. 2.0.

For NAT Traversal Service

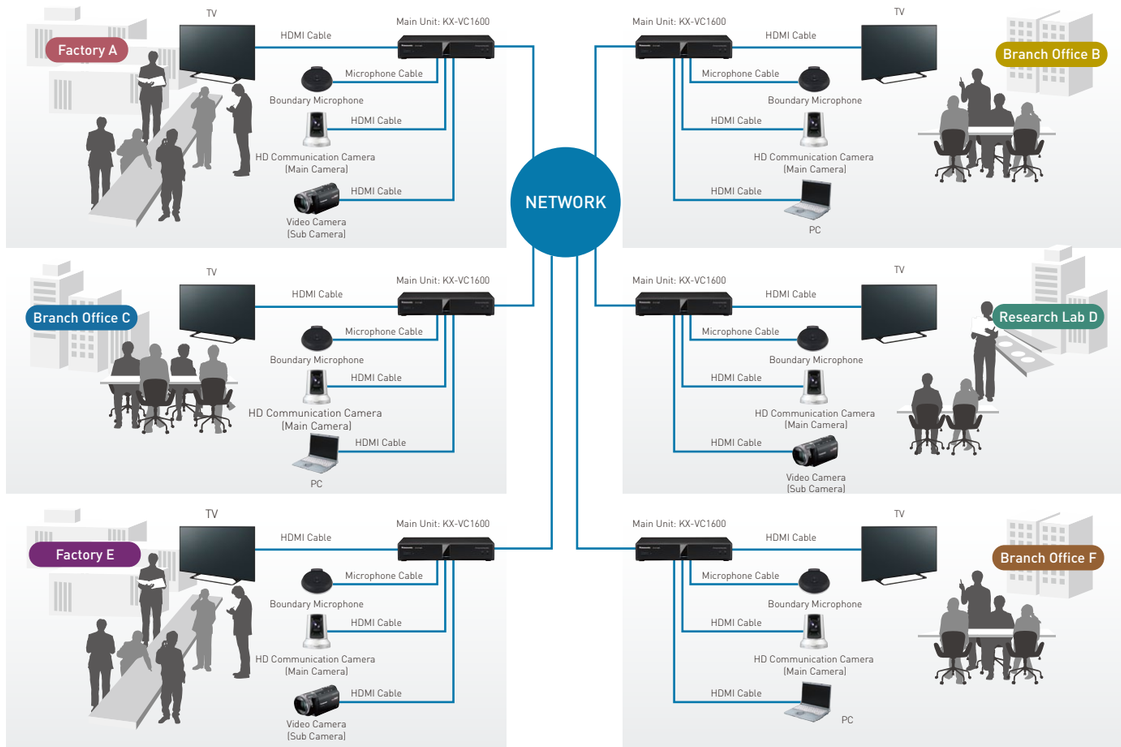
Type	Detail	Model
For the HD Visual Communications System	NAT Traversal Service Activation Key - 1 Year NAT Traversal Service Activation Key - 3 Years	KX-VCS701 KX-VCS703
For a Windows Terminal*1	Mobile Activation Key - 1 Year for Windows Mobile Activation Key - 3 Years for Windows	KX-VCS781 KX-VCS783
For an iOS Terminal*2	Mobile Activation Key - 1 Year Mobile Activation Key - 3 Years	KX-VCS711 KX-VCS713
For an Android™ Terminal*1*3	5 Mobile Activation Keys - 1 Year 5 Mobile Activation Keys - 3 Years	KX-VCS751X KX-VCS753X

*1 Connection to the KX-VC1600 or KX-VC1300 from Windows PCs and Android™ devices is scheduled to be supported from December 2014.
*2 HDVC Mobile ver. 3.0 for iOS
*3 HDVC Mobile ver. 2.0 for Android™

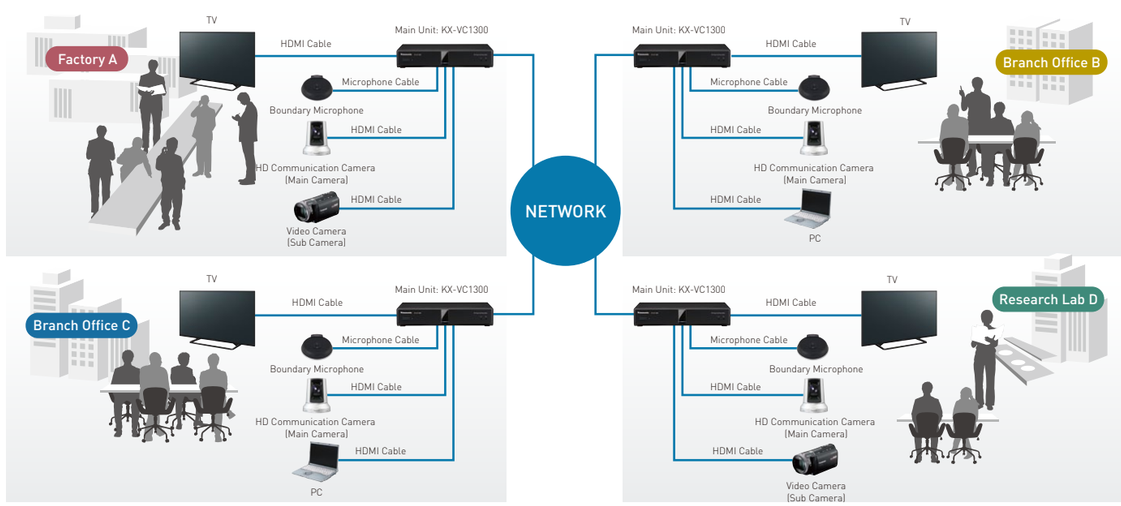
System Configuration Examples

Example of standard 6-site connection with the KX-VC1600

The 4-site connection expandability can be used with the KX-VC1600 to increase the number of connection sites to a maximum of 10 sites including home location.



Example of standard 4-site connection with the KX-VC1300



Specifications

KX-VC1600/ KX-VC1300

Main Unit			KX-VC1600	KX-VC1300
Terminal Method			IETF SIP, ITU-T H.323	
Image Compression Method			H.261 (mainstream only), H.263, H263+, H.263++ (reception only), H.264 High Profile, H.264 Baseline Profile	
Audio Compression Method			G.711μ-law, A-law (3.4 kHz @ 64 kbps) G.722 (7.0 kHz @ 64 kbps) G.722.1 (7.0 kHz @ 32 kbps)*1 G.722.1 Annex C(14.0 kHz @ 48 kbps/24 kbps)*1 MPEG-4 AAC-LD Mono (14.0 kHz @ 32 kbps, 22.0 kHz @ 96 kbps/64 kbps) MPEG-4 AAC-LD Stereo (22.0 kHz @ 96 kbps/64 kbps) x 2	
	No. of Channels		G.711/G.722/G.722.1/G.722.1 Annex C: 1 MPEG-4 AAC-LD Mono: 1/ MPEG-4 AAC-LD Stereo: 2	
Remote Camera Control			H.281 (Zoom/Pan/Tilt/Preset)	
Dual Stream	Method		H.239 (H.323), BFCP (SIP)	
	Multi-Monitor		3 Monitors	2 Monitors
	No. of Applicable Resolution Frames		Main: Max. 1080p 30 frames/second, Sub: 1080p 30 frames/second	
Encryption			SRTP (AES 128 bit), H.235 (AES 128 bit)	
Other			H.460	
Communication Bandwidth			256 kbps to 18 Mbps	
Video	Compatible Resolutions*2		176 x 144p, 352 x 240p, 352 x 288p, 512 x 288p, 640 x 480p, 704 x 480p, 768 x 432p, 800 x 600p 1024 x 768p, 1280 x 720p, 1280 x 768p, 1280 x 800p, 1920 x 1080i, 1920 x 1080p	
	No. of Frames		Max. 60 frames/second (for H.264 1080p)	
	Screen Display		Full-screen, PinP, PwithP, Side by Side	
Audio			Echo canceller, Auto gain control, Auto noise reduction, Lip synch, Mic mute	
I/O Terminals	Video Input	Camera*3	HDMI main x 1, HDMI sub x 1 Input compatible resolution: 1280 x 720p, 1920 x 1080i, 1920 x 1080p	
		PC	RGB x 1(Mini D-sub 15pin), HDMI x 1*3 Input compatible resolution: VGA, SVGA, XGA, HD, WXGA, SXGA, UXGA, WSXGA+, Full-HD	
	Video Output		HDMI x 2, HDMI x 1 (for Self Base/Record) RCA x 1 (Component) Output compatible resolution: 1920 x 1080i, 1920 x 1080p	HDMI x 2 Output compatible resolution: 1920 x 1080i, 1920 x 1080p
	Audio Input		Digital Boundary Microphone x 1 (KX-VCA001), Max. 4; Analogue Boundary Microphone x 1 (KX-VCA002), Max. 1 Stereo mini-plug (x 1(ø3.5 mm) RCA (Stereo) x 1	
	Audio Output		HDMI*4, Stereo x 1 (ø3.5 mm), RCA x 1 (Stereo)	
	Network		RJ45 x 2 (100BASE-TX Full Duplex)	RJ45 x 1 (100BASE-TX Full Duplex)
	External Control		RS-232C x 1 (Also used for maintenance)	
	Others		USB x 1, Camera Control Terminal x 1 (Unused)	
No. of Simultaneous Connection Sites			6 (Expandable up to 10)*5	4
Content Sharing			PC(RGB/HDMI), Sub-camera (HDMI sub)	
USB Memory			Version upgrade Import: Setting data, Address book, Profiles, Starting screen Export: Setting data, Address book, Profiles	
Network Protocol			TCP/IP, UDP/IP, DHCP, DNS, HTTP, HTTPS, TELNET, NTP	
Network Functions			Automatic Repeat Query (ARQ), Forward Error Correction (FEC), Adaptive Rate Control (ARC), Reorder, Packet Shaping, Arbitrary Port Setting, NAT Compatibility, Encryption, IP Precedence/DiffServ Support	
External Control			Via Web Browser, Control by HTTP CGI, TELNET, RS-232C	
Connection Modes			IP mode, NAT Traversal Service	
Dimensions (width x depth x height)			Approx. 320 mm x approx. 230 mm x approx. 60 mm	
Weight			Approx. 2.0 kg	
Power Input			AC 100-240 V,-1.4A, 50/60 Hz	
Power Consumption			Maximum: approx. 45 W, Standby: 0.6 W	Maximum: approx. 43 W, Standby: 0.6 W
DC Power Input			DC 24 V, 2.5 A	
Operating Temperature			0 °C to 40 °C	
Operating Humidity			10 % to 90 % (non-condensing)	

*When connected to an other brand device or other brand MCU (Multi-point Control Unit), connection conditions vary depending on the specifications of the other brand device or other brand MCU.

*1 Using G.722.1/G.722.1 Annex C under license by Polycom®.
*2 Varies due to the settings of the HDVC System and the network condition.
*3 HDCP is not supported.
*4 Audio cannot be output simultaneously to HDMI1/HDMI2.
*5 An Activation Key is required.

HD Communication Camera

HD Communication Camera	GP-VD151	GP-VD131	AW-VC2
Effective Pixels	1920 x 1080		
Pan / Tilt	Pan: ±100°, Tilt: ±30°	Pan: ±100°, Tilt: ±20°	(Manual) Pan: ±180°, Tilt: ±20° (Electronic) Pan: ±23°, Tilt: ±14°*1
Zoom (optical/digital)	12x / 10x	3x / 4x	No optical zoom / i.Zoom 2x*2, Digital zoom 4x
Horizontal Angle of View	Maximum 56°(Wide)	Maximum 85°(Wide)	Maximum 95°(Wide)
Presets	9 positions		
Connection Cable	HDMI		
Dimensions (width x depth x height)	Approx. 150 mm x approx. 148 mm x approx. 177 mm	Approx. 133 mm x approx. 127 mm x approx. 139 mm	Approx. 80 mm x approx. 138 mm x approx. 117 mm
Weight	Approx. 1.2 kg	Approx. 0.8 kg	Approx. 0.25 kg
Power Consumption	Power supply voltage: 12 VDC±10% (with AC adaptor attached) Consumption current: 1.0 A	Power supply voltage: 16 VDC±10% (with AC adaptor attached) Consumption current: 0.6 A	Power supply voltage: 5 VDC±10% (with AC adaptor attached) Consumption current: 0.8 A
Operating Temperature	0 °C to 40 °C		
Operating Humidity	10 % to 90 % (non-condensing)		

*1 With i.Zoom 2x.
*2 i.Zoom function maintains high-definition picture quality.

KX-VC300

Main Unit			KX-VC300
Terminal Method			IETF SIP, ITU-T H.323
Image Compression Method			H.264 High Profile Level 3.1/4.0, H.264 Baseline Profile Level 3.1
Audio Compression Method			G.711μ-law, A-law (3.4 kHz @ 64 kbps) G.722 (7.0 kHz @ 64 kbps) G.722.1 (7.0 kHz @ 32 kbps)*1 G.722.1 Annex C(14.0 kHz @ 48 kbps/24 kbps)*1 MPEG-4 AAC-LD Mono (7.0 kHz @ 32 kbps/64 kbps/96 kbps) MPEG-4 AAC-LD Stereo (22.0 kHz @ 96 kbps/64 kbps)
	No. of Channels		G.711/G.722/G.722.1/G.722.1 Annex C: 1 MPEG-4 AAC-LD Mono: 1/ MPEG-4 AAC-LD Stereo: 2
Remote Camera Control			Original, H224, H.281 (Zoom/Pan/Tilt/Preset)
Dual Stream	Method		—
	Multi-Monitor		—
	No. of Applicable Resolution Frames		—
Encryption			SRTP (AES 128 bit), H.235
Other			H.460
Communication Bandwidth			256 kbps to 9 Mbps
Video	Compatible Resolutions*2		352 x 240p, , 512 x 288p, 704 x 480p, 768 x 432p, 960 x 540p, 1280 x 540p, 1280 x 720p
	No. of Frames		Max. 60 frames/second (for H.264 720p)
	Screen Display		Full-screen, PinP
Audio			Echo canceller, Auto gain control, Auto noise reduction, Lip synch, Mic mute
I/O Terminals	Video Input	Camera*3	HDMI main x 1, HDMI sub x 1 Input compatible resolution: 1920 x 1080i
		PC	RGB x 1(Mini D-sub 15pin) Input compatible resolution: VGA, SVGA, XGA, HD, WXGA
	Video Output		HDMI x 1, RCA x 1 (Componen) Output compatible resolution: 1080i
	Audio Input		Analogue Boundary Microphone x 1 (KX-VCA002), Max. 1 Stereo mini-plug x 1(ø3.5 mm) RCA (Stereo) x 1
	Audio Output		HDMI x 1, Stereo mini plug x 1 (ø3.5 mm), RCA x 1 (Stereo)
	Network		RJ45 x 1 (100BASE-TX Full Duplex)
	External Control		RS-232C x 1 (Also used for maintenance)
	Others		USB x 1
No. of Simultaneous Connection Sites			2*4
Content Sharing			PC(HDMI), Sub-camera (HDMI sub)
USB Memory			Version upgrade Import/Export: Setting data, Address book
Network Protocol			TCP/IP, UDP/IP, DHCP, DNS, HTTP, HTTPS, TELNET, NTP
Network Functions			Automatic Repeat Query (ARQ), Forward Error Correction (FEC), Adaptive Rate Control (ARC), Reorder, Packet Shaping, Arbitrary Port Setting, NAT Compatibility, Encryption, IP Precedence/DiffServ Support
External Control			Via Web Browser, Control by HTTP CGI, TELNET, RS-232C
Connection Modes			IP mode, NAT Traversal Service
Dimensions (width x depth x height)			Approx. 320 mm x approx. 230 mm x approx. 60 mm
Weight			Approx. 2.0 kg
Power Input			AC 100-240 V,1.2A-0.6A, 50/60 Hz
Power Consumption			Maximum: approx. 23 W, Standby: 17 W
DC Power Input			DC 16 V, 2.5 A
Operating Temperature			0 °C to 40 °C
Operating Humidity			10 % to 90 % (non-condensing)

*When connected to an other brand device or other brand MCU (Multi-point Control Unit), connection conditions vary depending on the specifications of the other brand device or other brand MCU.

*1 Using G.722.1/G.722.1 Annex C under license by Polycom®.
*2 Varies due to the settings of the HDVC System and the network condition. An optional Activation Key enables the addition of a Full-HD (1080i/1080p) transmission function.
*3 HDCP is not supported.
*4 If an incoming call is received as a reception site, participation is possible with 3-4 site connection. An optional Activation Key allows expansion to a maximum of 4 connection sites.
When HDVC Mobile is connected, or when another-brand device or another-brand MCU is connected, the maximum is 2 connection sites.

Boundary Microphone

Boundary Microphone	KX-VCA001	KX-VCA002
Maximum Pickup Range	Approx. 4 m(radius), 360°	Approx. 2 m(radius), 300°
Pickup Method	Stereo / Monaural *1	Stereo / Monaural *2
Microphone Unit	Unidirectional ECM microphone parts x 4	Unidirectional ECM microphone parts x 2
Number of Connections	Maximum 4 microphones	Maximum 1 microphone
Maximum Input Sound Pressure	110 dBspl	
Number of Terminals for Microphone Connection	2	1
Dimensions	Approx. 120 mm(diameter) x 25 mm	Approx. 75 mm(diameter) x 32 mm
Cable Length	Approx. 8.5 m	Approx. 7 m
Power Input	Supplied from main unit via proprietary cable	
Weight	Approx. 280 g	Approx. 80 g
Operating Temperature	0 °C to 40 °C	
Operating Humidity	10 % to 90 % (non-condensing)	

*1 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural:
• The bandwidth is higher than approximately 1.8 Mbps in a 2-party videoconference call with the HDVC Unit using SIP.
• The MIC position is set manually to "Center stereo", or the MIC position is set automatically with a Digital Boundary Microphone connected to the unit and no Analogue Boundary Microphone connected to the unit at the same time.
*2 If either of the following conditions is met, the output sent to the other party will be stereo; otherwise, monaural:
• The bandwidth is higher than approximately 1.8 Mbps in a 2-party videoconference call with the HDVC Unit using SIP.
• Digital Boundary Microphones and an Analogue Boundary Microphone are not being used together.

Extension Cable for the Digital Boundary Microphone	KX-VCAEX01
Dimensions (diameter x length)	7 mm(cable outer diameter) x 20 m
Weight	1.28 kg
Operating Temperature	0 °C to 40 °C
Operating Humidity	10 % to 90 % (non-condensing)